IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A disk-shaped information recording medium comprising:

spiral tracks; and

at least one index header which is aligned in a radial direction of a disk to partially intercept said spiral tracks,

wherein said spiral tracks have a plurality of recording fields each having a predetermined track length,

each of said recording fields has a header field and data field,

said header field records address data,

said data field records user data,

a specific one of said recording fields is allocated to extend across said index header,

the specific recording field has first and second sub recording fields to have said index header as a boundary, and

said first and second sub recording fields respectively have connection fields for connecting the two sub recording fields.

2. (Original) A medium according to claim 1, wherein said index header has address data recorded as an embossed pattern.

3. (Original) A medium according to claim 1, wherein said index header has, along a track direction, a plurality of index header areas corresponding to respective rounds of tracks of said spiral tracks.

4. (Original) A medium according to claim 3, wherein each of said index header areas is allocated on an extended line of the corresponding round of track, and has address data of the corresponding round of track.

5. (Original) A medium according to claim 3, herein each of said index header areas has a plurality of header parts,

a predetermined header part 1 of the plurality of header parts of the index header area corresponding to the n-th round of track of said spiral tracks has address data,

a predetermined header part 2 of the plurality of header parts of the index header area corresponding to the (n+1)-th round of track of said spiral tracks has address data, and

the header parts 1 and 2 are allocated at different positions in the radial direction.

Claim 6. (Canceled)

Claim 7. (Canceled)

8. (Currently Amended) A medium according to claim [[7]]1, wherein said first sub recording field has a first header field,

said connection field of said second sub recording field has a second header field, and

said first and second header fields record identical address data.

9. (Original) A medium according to claim 1, wherein said information recording medium has a plurality of concentric zones, and

each of said zones includes said spiral tracks which are wobbled.

10. (Original) A medium according to claim 9, wherein the number of wobbles per round of spiral tracks included in a specific zone is identical, and a disk rotational speed upon accessing the specific zone and a frequency upon recording data on the specific zone can be determined on the basis of a frequency reproduced from the wobbles of said spiral tracks.

11. (Original) A medium according to claim 1, wherein said spiral tracks are alternately switched to land- and groove-shaped tracks in units of rounds, and

said index header is aligned at only a boundary between said land- and groove-shaped tracks.

12. (Currently Amended) A medium according to claim [[6]]1, wherein the address data recorded as an embossed pattern in said index header is used before said recording fields are allocated on said spiral tracks, or is additionally used after said recording fields are allocated on said spiral tracks, and

the address data recorded in the header field in the recording field is used after that recording field is allocated on the spiral track.

13. (Currently Amended) An information recording apparatus for recording information on a disk-shaped information recording medium which comprises:

spiral tracks; and

at least one index header which is aligned in a radial direction of a disk to partially intercept the spiral tracks, and in which address data of a track is recorded as an embossed pattern,

said apparatus comprising:

first recording means for recording a recording field having a header field and data field on the spiral tracks on the basis of address data recorded as an embossed pattern in said index header, and recording address data of the recording field in the header field, and

second recording means for recording a specific recording field extending across said index header,

wherein the specific recording field has first and second sub recording fields to have said index header as a boundary, and

the first and second sub recording fields respectively have connection fields for connecting the two sub recording fields.

14. (Currently Amended) An apparatus according to claim 13, further comprising data recording means for recording target data in the data field of the recording field on the basis of the address data recorded in the header field after said first recording means records the address data in the header field of the recording field.

15. (Currently Amended) An apparatus according to claim 13, further comprising data recording means for recording target data in the data field of the recording field on the basis of the address data recorded in the header field without rewriting the address data recorded in

the header field after said first recording means records the address data in the header field of the recording field.

16. (Original) An apparatus according to claim 13, wherein the information recording medium has a plurality of concentric zones,

each of the zones includes the spiral tracks which are wobbled,

the number of wobbles per round of spiral tracks included in a specific zone is identical,

the spiral tracks alternately have land- and groove-shaped tracks in units of rounds,

the index header is aligned at only a boundary between the land- and groove-shaped tracks, and

said apparatus further comprises:

tracking control means for controlling tracking to make a light beam track the land- and groove-shaped tracks by detecting the index header;

first control means for controlling a disk rotational speed upon accessing a specific zone on the basis of a frequency reproduced from wobbles of the spiral tracks included in the specific zone; and

second control means for controlling a frequency of data recording with respect to a specific zone on the basis of a frequency reproduced from wobbles of the spiral tracks included in the specific zone.

17.(Currently Amended) An information recording method for recording information on a disk-shaped information recording medium which comprises:

spiral tracks; and

at least one index header which is aligned in a radial direction of a disk to partially intercept the spiral tracks, and in which address data of a track is recorded as an embossed pattern,

said method comprising the step of:

recording a recording field having a header field and data field on the spiral tracks on the basis of address data recorded as an embossed pattern in said index header, and recording address data of the recording field in the header field, and

recording a specific recording field extending across said index header,

wherein the specific recording field has first and second sub recording fields to have said index header as a boundary, and

said first and second sub recording fields respectively have connection fields for connecting the two sub recording fields.

18. (Original) A method according to claim 17, further comprising the step of recording target data in the data field of the recording field on the basis of the address data recorded in the header field after the address data is recorded in the header field of the recording field.

19. (Original) A method according to claim 17, further comprising the step of recording target data in the data field of the recording field on the basis of the address data recorded in the header field without rewriting the address data recorded in the header field after said the address data is recorded in the header field of the recording field.

20. (Original) A method according to claim 17, wherein the information recording medium has a plurality of concentric zones,

each of the zones includes the spiral tracks which are wobbled,

the number of wobbles per round of spiral tracks included in a specific zone is identical,

the spiral tracks alternately have land- and groove-shaped tracks in units of rounds,

the index header is aligned at only a boundary between the land- and groove-shaped tracks, and

said method further comprises the steps of:

controlling tracking to make a light beam track the land- and groove-shaped tracks by detecting the index header;

controlling a disk rotational speed upon accessing a specific zone on the basis of a frequency reproduced from wobbles of the spiral tracks included in the specific zone; and

controlling a frequency of data recording with respect to a specific zone on the basis of a frequency reproduced from wobbles of the spiral tracks included in the specific zone.

21. (Currently Amended) An information reproduction apparatus for reproducing information from a disk-shaped information recording medium which comprises:

wobbled spiral tracks; and

at least one index header which is aligned in a radial direction of a disk to partially intercept the spiral tracks, and in which address data of a track is recorded as an embossed pattern, and

in which the spiral tracks have a plurality of recording fields each having a predetermined track length,

each recording field has a header field and data field,

the header field records address data, [[and]]

the data field records user data,

a specific one of the recording fields is allocated to extend across the index header,

the specific recording field has first and second sub recording fields to have the index header as a boundary,

the first and second sub recording fields respectively have connection fields for connecting the two sub recording fields,

the first sub recording field has a first header field, and

the first header field records address data of the specific recording field,

said apparatus comprising:

first data reproduction means for reproducing target data recorded in the data field of the recording field on the basis of the address data recorded in the header field of the recording field, and

second data reproduction means for reproducing target data recorded in the data field of the specific recording field on the basis of the address data recorded in the first header field of the specific recording field.

22. (Original) An apparatus according to claim 21, wherein the information recording medium has a plurality of concentric zones,

each of the zones includes the wobbled spiral tracks,

the number of wobbles per round of spiral tracks included in a specific zone is identical,

the spiral tracks alternately have land- and groove-shaped tracks in units of rounds,

the index header is aligned at only a boundary between the land- and groove-shaped tracks, and

said apparatus further comprises:

tracking control means for controlling tracking to make a light beam track the land- and groove-shaped tracks by detecting the index header; and

control means for controlling a disk rotational speed upon accessing a specific zone on the basis of a frequency reproduced from wobbles of the spiral tracks included in the specific zone.

23. (Currently Amended) An information reproduction method for reproducing information from a disk-shaped information recording medium which comprises:

wobbled spiral tracks; and

at least one index header which is aligned in a radial direction of a disk to partially intercept the spiral tracks, and in which address data of a track is recorded as an embossed pattern, and

in which the spiral tracks have a plurality of recording fields each having a predetermined track length,

each recording field has a header field and data field,

the header field records address data, [[and]]

the data field records user data,

a specific one of the recording fields is allocated to extend across the index header,

the specific recording field has first and second sub recording fields to have the index header as a boundary,

the first and second sub recording fields respectively have connection fields for connecting the two sub recording fields,

the first sub recording field has a first header field, and

the first header field records address data of the specific recording field,

said method comprising the step of:

reproducing target data recorded in the data field of the recording field on the basis of the address data recorded in the header field of the recording field, and

reproducing target data recorded in the data field of the specific recording field on the basis of the address data recorded in the first header field of the specific recording field.

24. (Original) A method according to claim 23, wherein the information recording medium has a plurality of concentric zones,

each of the zones includes the wobbled spiral tracks,

the number of wobbles per round of spiral tracks included in a specific zone is identical,

the spiral tracks alternately have land- and groove-shaped tracks in units of rounds,

the index header is aligned at only a boundary between the land- and groove-shaped tracks, and

said method further comprises the steps of:

controlling tracking to make a light beam track the land- and groove-shaped tracks by detecting the index header; and

controlling a disk rotational speed upon accessing a specific zone on the basis of a frequency reproduced from wobbles of the spiral tracks included in the specific zone.

25. (New) A medium according to claim 1, wherein:

said first sub recording field has a first header field, and

said first header field records address data of the specific recording field.

26. (New) An apparatus according to claim 13, wherein:

said first sub recording field has a first header field, and

said second recording means records address data of the specific recording field in said first header field.

27. (New) An apparatus according to claim 13, wherein:

said first sub recording field has a first header field,

said connection field of said second sub recording field has a second header field, and

said second recording means records address data of the specific recording field in said first header field, and records the address data of the specific recording field in said second header field.

28. (New) A method according to claim 17, wherein said first sub recording field has a first header field, and said method further comprises:

recording address data of the specific recording field in said first header field.

29. (New) A method according to claim 17, wherein said first sub recording field has a first header field, and said connection field of said second sub recording field has a second header field, and said method further comprises:

recording address data of the specific recording field in said first header field, and the address data of the specific recording field in said second header field.

30. (New) An apparatus according to claim 21, wherein:

the connection field of the second sub recording field has a second header field,

the second header field records the address data of the specific recording field, and

the second data reproduction means reproduce target data recorded in the data field of the specific recording field on the basis of the address data recorded in the first and second header field of the specific recording field.

31. (New) A method according to claim 23, wherein the connection field of the second sub recording field has a second header field, the second header field records the address data of the specific recording field, and said method further comprises:

reproducing target data recorded in the data field of the specific recording field on the basis of the address data recorded in the first and second header field of the specific recording field.